I. <u>Amendments to the Claims</u>

Please enter the following amendments to claims 1 and 22; cancel claims 16, 18 and 19; and add new claim 30. The following listing of claims replaces all prior versions and listings of claims in the present application.

1. (Currently Amended) An article for conducting high power electrical current comprising a high conductivity nanocomposite comprised of a base of metal or alloy and a plurality of nanoscale particles dispersed within the base<u> wherein the nanoscale particles are incorporated in a region near a surface of the base in a concentration gradient that decreases in a direction from the surface to an interior of the base</u>, the base having an electrical resistivity less than about 10 microhm-cm and the nanoscale particles having an electrical resistivity less than about 20 microhm-cm and an average diameter of less than 500 nanometers to strengthen the base without substantially reducing the conductivity of the composite as compared with the base.

2. (Original) The article of claim 1 wherein the nanoscale particles have an average diameter less than 100 nanometers.

3. (Original) The article of claim 1 wherein the volume fraction of the nanoscale particles in the base is in the range 0.2-20% and preferably 0.5-10%.

4. (Original) The article of claim 1 wherein the base metal or alloy has an electrical resistivity less than 6 microhm-cm and preferably less than 3 microhm-cm.

5. (Original) The article of claim 1 wherein the base comprises a metal or alloy selected from the group consisting of Cu, Au, Ag, Co, Pd, Pt, Rh, Re, Cr, Zn, Au-Ag, and Cu-Ni.

6. (Original) The article of claim 1 wherein the base comprises copper.

7. (Original) The article of claim 1 wherein the nanoscale particles have an electrical resistivity less than 6 microhm-cm and preferably less than 3 microhm-cm.

8. (Original) The article of claim 1 wherein the nanoscale particles comprise metal particles with a solid solubility in the base of less than 0.1 atomic %.

9. (Original) The article of claim 1 wherein the nanoscale particles comprise particles that are insoluble in the base.

10. (Original) The article of claim 1 wherein the nanoscale particles comprise intermetallic compounds.

11. (Original) The article of claim 1 wherein the nanoscale particles comprise intermetallic compounds selected from the group consisting of Mn_4Al_{11}, NiAl and $TiAl_3$.

12. (Original) The article of claim 1 wherein the nanoscale particles comprise particles of material selected from the group consisting of carbides, nitrides, borides, carbon, graphite and diamond.

13. (Original) The article of claim 1 wherein the nanoscale particles comprise particles of material selected from the group consisting of cerium carbide, tantalum carbide, zirconium carbide, tin carbide, silicon carbide, titanium carbide and titanium nitride.

14. (Original) The article of claim 1 wherein the nanocomposite material has a sufficient concentration of nanoscale particles to enhance its mechanical strength enhanced by at least 30% over the base.

15. (Original) The article of claim 1 wherein the nanocomposite has a sufficient concentration of nanoscale particles to enhance its resistance to thermal fatigue by at least 30% over the base.

16 (Cancelled)

17. (Original) The article of claim 1 wherein the nanoscale particles are incorporated selectively near a surface of the base.

18. (Cancelled)

19. (Cancelled)

20. (Original) A high power microwave component comprising the article of claim 1.

21. (Original) An electrical connector or electrical contact comprising the article of claim 1.

22. (Currently Amended) A method of making a body of a high conductivity nanocomposite comprising the steps of:

forming a nanocomposite comprising a base metal or alloy and a plurality of nanoscale particles dispersed within the base<u> wherein the nanoscale particles are incorporated in a region near a surface of the base in a concentration gradient that decreases in a direction from the surface to an interior of the base,</u> the base having an electrical resistivity less than about 10 microhm-cm and the nanoscale particles having an average diameter of less than about 500 nanometers and electrical resistivity less than about 20 microhm-cm; and

shaping the nanocomposite into a body.

23. (Original) The method of claim 22 wherein the nanocomposite material is formed by a co-depositing the base metal or alloy and the nanoscale particles in an electrolyte solution.

24. (Original) The method of claim 23 further comprising the step of coating the nanoscale particles with metal before forming the nanocomposite.

25. (Original) The method of claim 23 further comprising the step of annealing the nanoscale particles in an inert or reducing atmosphere before forming the nanocomposite.

26. (Original) The method of claim 23 wherein the nanocomposite material is formed by coating the nanoscale particles with the base metal or alloy, pressing the coated particles together, and sintering the pressed particles.

27. (Original) The method of claim 26 wherein the nanoscale particles are coated by electroless plating.

28. (Original) The method of claim 26 wherein the nanoscale particles are coated with at least 0.1 micrometers of the base metal or alloy and preferably at least 1 micrometer.

29. (Original) The method of claim 22 wherein the nanocomposite material is formed by mixing the dispersoid particles with particles of the base metal or alloy, pressing the mixed particles together, and sintering the pressed particles.

30. (New) An article for conducting high power electrical current comprising a high conductivity nanocomposite comprised of a base of metal or alloy and a plurality of nanoscale particles dispersed within the base, the base having an electrical resistivity less than about 10 microhm-cm and the nanoscale particles having an electrical resistivity less than about 20 microhm-cm and an average diameter of less than 500 nanometers to strengthen the base without substantially reducing the conductivity of the composite as compared with the base, wherein the nanoscale particles comprise intermetallic compounds selected from the group consisting of Mn_4Al_{11}, NiAl and $TiAl_3$.